

Amendments to the Claims

This listing of claims replaces all prior versions and listings of claims in the application.

Listing of Claims:

1. (Currently Amended) A method for manufacturing a semiconductor device comprising the steps of:

forming a semiconductor film over a substrate;

first cleaning a surface of [[a]] the semiconductor film by using a first solution; [[and]]

applying a laser beam to the cleaned surface of said semiconductor film to ~~form a~~
~~crystalline~~ increase crystallinity of the semiconductor film;

second cleaning a surface of the semiconductor film by using a second solution after
applying the laser beam;

patterning the semiconductor film after the second cleaning; and

forming a gate insulating film on a surface of the patterned semiconductor film. ~~in a~~
~~nitrogen atmosphere.~~

2. (Currently Amended) A method according to claim 1, wherein said first solution
comprises a cleaning ~~is performed by using~~ HF aqueous solution or an aqueous solution
containing HF and H₂O₂.

3. (Original) A method according to claim 1, wherein said laser beam has an energy
density of 100 to 500 mJ/cm².

4. (Currently Amended) A method for manufacturing a semiconductor device comprising the steps of:

forming a semiconductor film over a substrate;

cleaning a surface of said semiconductor film;

preheating the cleaned surface of said semiconductor film to form an oxide film; **[[and]]**
applying a laser beam to said semiconductor film through said oxide film to ~~form a~~
~~crystalline~~ increase crystallinity of the semiconductor film; and
patterning the semiconductor film after applying the laser beam. ~~in a nitrogen~~
~~atmosphere.~~

5. (Original) A method according to claim 4, wherein said cleaning is performed by using HF aqueous solution or an aqueous solution containing HF and H₂O₂.

6. (Original) A method according to claim 4, wherein said laser beam has an energy density of 100 to 500 mJ/cm².

7. (Currently Amended) A method for manufacturing a semiconductor device comprising the steps of:

forming a semiconductor film over a substrate;
cleaning a surface of said semiconductor film;
preheating the cleaned surface of said semiconductor film in an atmosphere containing oxygen and nitrogen to form an oxide film; **[[and]]**
applying a laser beam to said semiconductor film through said oxide film to ~~form a~~
~~crystalline~~ increase crystallinity of the semiconductor film; and
patterning the semiconductor film after applying the laser beam. ~~in a nitrogen~~
~~atmosphere.~~

8. (Original) A method according to claim 7, wherein said cleaning is performed by using HF aqueous solution or an aqueous solution containing HF and H₂O₂.

9. (Original) A method according to claim 7, wherein said laser beam has an energy density of 100 to 500 mJ/cm².

10. (Currently Amended) A method for manufacturing a semiconductor device comprising the steps of:

- forming a semiconductor film over a substrate;
- cleaning a surface of said semiconductor film;
- preheating the cleaned surface of said semiconductor film to form an oxide film on the cleaned ~~[[a]]~~ surface of said semiconductor film; ~~[[and]]~~
- applying a laser beam to said semiconductor film through said oxide film to ~~form a~~ crystalline increase crystallinity of the semiconductor film; and
- patterning the semiconductor film after applying the laser beam. ~~in a nitrogen atmosphere.~~

11. (Original) A method according to claim 10, wherein said cleaning is performed by using HF aqueous solution or an aqueous solution containing HF and H₂O₂.

12. (Original) A method according to claim 10, wherein said laser beam has an energy density of 100 to 500 mJ/cm².

13. (Withdrawn) A method for manufacturing a semiconductor device comprising the steps of:

- forming a crystalline semiconductor film over a substrate;
- cleaning a surface of said crystalline semiconductor film; and
- applying a laser beam to the cleaned surface of said crystalline semiconductor film to improve crystallinity of said crystalline semiconductor film in a nitrogen atmosphere.

14. (Withdrawn) A method according to claim 13, wherein said cleaning is performed by using HF aqueous solution or an aqueous solution containing HF and H₂O₂.

15. (Withdrawn) A method according to claim 13, wherein said laser beam has an energy density of 100 to 500 mJ/cm².

16. (Currently Amended) A method for manufacturing a semiconductor device comprising the steps of:

forming a crystalline semiconductor film over a substrate;
cleaning a surface of said crystalline semiconductor film;
preheating the cleaned surface of said crystalline semiconductor film to form an oxide film on the cleaned surface; **[[and]]**
applying a laser beam to said crystalline semiconductor film through said oxide film to improve crystallinity of said crystalline semiconductor film; and
patterning the semiconductor film after applying the laser beam. ~~in a nitrogen atmosphere.~~

17. (Original) A method according to claim 16, wherein said cleaning is performed by using HF aqueous solution or an aqueous solution containing HF and H₂O₂.

18. (Original) A method according to claim 16, wherein said laser beam has an energy density of 100 to 500 mJ/cm².

19. (Currently Amended) A method for manufacturing a semiconductor device comprising the steps of:

forming a semiconductor film over a substrate;
first cleaning a surface of said semiconductor film by using a first solution;
forming an oxide film on the cleaned **[[a]]** surface of said semiconductor film; **[[and]]**
applying a laser beam to said semiconductor film through said oxide film to ~~form a~~
~~crystalline~~ increase crystallinity of the semiconductor film in the air;

second cleaning a surface of the semiconductor film by using a second solution after applying the laser beam;
patterning the semiconductor film after the second cleaning; and
forming a gate insulating film on a surface of the patterned semiconductor film.

20. (Original) A method according to claim 19, wherein said laser beam is a linear laser beam.

21. (Original) A method according to claim 19, wherein said laser beam has an energy density of 100 to 500 mJ/cm².

22. (Original) A method according to claim 19, wherein said oxide film has a thickness of 20-40Å.

23. (Currently Amended) A method for manufacturing a semiconductor device comprising the steps of:

forming a semiconductor film over a substrate;
first cleaning a surface of said semiconductor film by using HF aqueous solution or an aqueous solution containing HF and H₂O₂;
forming an oxide film on the cleaned ~~[[a]]~~ surface of said semiconductor film; ~~[[and]]~~
applying a laser beam to said semiconductor film through said oxide film to ~~form a~~
~~erystalline~~ increase crystallinity of the semiconductor film in the air;
second cleaning a surface of the semiconductor film by using a second solution after applying the laser beam;
patterning the semiconductor film after the second cleaning; and
forming a gate insulating film on a surface of the patterned crystalline semiconductor film.

24. (Original) A method according to claim 23, wherein said laser beam is a linear laser beam.

25. (Original) A method according to claim 23, wherein said laser beam has an energy density of 100 to 500 mJ/cm².

26. (Original) A method according to claim 23, wherein said oxide film has a thickness of 20-40Å.

27. (New) A method according to claim 1, wherein applying the laser beam comprises doing so in a nitrogen atmosphere.

28. (New) A method according to claim 1, wherein applying the laser beam comprises doing so in an air atmosphere.

29. (New) A method according to claim 1, wherein the first and second solutions are the same.

30. (New) A method according to claim 1, wherein the first and second solutions are different.

31. (New) A method according to claim 4, wherein applying the laser beam comprises doing so in a nitrogen atmosphere.

32. (New) A method according to claim 7, wherein applying the laser beam comprises doing so in a nitrogen atmosphere.

33. (New) A method according to claim 7, wherein applying the laser beam comprises doing so in an air atmosphere.

34. (New): A method according to claim 10, wherein applying the laser beam comprises doing so in a nitrogen atmosphere.

35. (New) A method according to claim 16, wherein applying the laser beam comprises doing so in a nitrogen atmosphere.

36. (New) A method according to claim 19, wherein the first and second solutions are the same.

37. (New) A method according to claim 19, wherein the first and second solutions are different.

38. (New) A method according to claim 23, wherein the first and second solutions are the same.

39. (New) A method according to claim 23, wherein the first and second solutions are different.